

REMARKS

The foregoing amendment amends Claims 1-3, 5, 8, 9 and 13. The amendment is supported by the specification. *See e.g.* [0083-0085]. No new matter has been added. Claims 1-3, 5, 6, 8, 9 and 13-16 are pending in this application with claims 1, 8, 9 and 13 being independent claims. For the reasons set forth below, Applicant believes that the rejections should be withdrawn and that this application is in condition for allowance.

Claim Objections

The Examiner objected to claim 5 because it depends from cancelled claim 4. The foregoing amendment amends claim 5 to depend from claim 1, so that the objection is now moot.

The Cited References Do Not Describe the Claimed Invention

The Examiner rejected claims 1-3, 7-9 and 13-14 under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,272,448 to Ishii (“Ishii”) in view of “Topographical Feature Representation by Openness Maps,” by R. Yokoyama *et al.* (“Yokoyama”). The Examiner rejected claims 5 and 15 under 35 U.S.C. 103(a) as being unpatentable over Ishii in view of Yokoyama and further in view of “Illuminating clay: a 3-D tangible interface for landscape analysis,” by Piper *et al.* (“Piper”). The Examiner rejected claims 6 and 16 under 35 U.S.C. 103(a) as being unpatentable over Ishii in view of Yokoyama, and further in view of “Solid Texturing o Riyo Shita 3-Jigen Nin’l Gamenjo ni Okeru Sensekibun Tatamikomiho,” by Kikukawa *et al.* (“Kikukawa”). As discussed below, these rejections are respectfully traversed.

Claims 1, 8 and 9

In paragraphs [0083-0085] the specification describes:

A second processing file 62 is adapted to verify, for a respective plane region S_m, a local region I_m⁺ at an obverse side (Z+ side) of the curved plane S residing within a prescribed radius from a focused point Q_m thereof, and determine a degree of openness defined thereby (i.e. a see-through solid angle

to the heaven end or a second-order differential value equivalent thereto) Ψ_m^+ about the focused point Q_m (FIG. 2, process P2), storing it as an elevation degree of the plane region S_m . FIG. 3 shows, as a process result A, an image in which the elevation degree Ψ_m^+ is tone-indicated over an entirety of the curved plane S. This image A clearly indicates a ridge side of terrain, i.e., a convexity (of the curved plane S) like an evident convexity.

A third processing file 63 is adapted to verify, for the plane region S_m , a local region L_m^- at a reverse side (Z-side) of the curved plane S residing within the prescribed radius from the focused point Q_m , and determine a degree of openness defined thereby (i.e. a see-through solid angle to the earth end or a second-order differential value equivalent thereto) Ψ_m^- about the focused point Q_m (FIG. 2, process P3), storing it as a depression degree of the plane region S_m . FIG. 5 shows, as a process result C, an image in which the depression degree Ψ_m^- is tone-indicated over an entirety of the curved plane S. This image C clearly indicates a valley side of terrain, i.e., a concavity (of the curved plane S) like an evident concavity. It should be noted that this image C does not constitute a simple reverse of the image A.

A fourth processing file 64 is adapted to synthesize, for the plane region S_m , the elevation degree Ψ_m^+ and the depression degree Ψ_m^- in a weighting manner ($w^+ \Psi_m^+ + w^- \Psi_m^-$) with a sharing proportion $w^+ : w^- (w^+ + w^- = 0)$ determined in an end-fit manner (that is, depending on which of ridge and valley is to be put above), thereby determining a stereoscopic effect to be brought about the focused point Q_m by a local region $L_m(L_m^+, L_m^-)$ at obverse and reverse of the curved plane S residing within the prescribed radius (FIG.2, process P4), storing it as an elevation-depression degree Ψ_m of the plane region S_m . FIG. 4 shows, as a process result B, an image in which the elevation-depression degree Ψ_m is tone-indicated over an entirety of the curved plane S. This image B clearly indicates a convexity (of the curved plane S) like an evident convexity, and a concavity like an evident concavity, thereby defining ridge and valley of terrain, with an intensified visually solid feeling. It is noted, for the image B, the weighting in synthesis is $w^+ = w^- = 1$.

The foregoing amendment to claim 1 clarifies the operation of the second, third and fourth subsets. The claimed visualization processing system includes a second subset of computer programs for determining a degree of openness defined about a focused point at a local region of a plane connecting the sequence of coordinate points by a region at an obverse side of the plane residing within a prescribed radius from the focused point, as an elevation degree of said local region. The visualization processing system also includes a

third subset of computer programs for determining a degree of openness defined about the focused point at said local region of the plane connecting the sequence of coordinate points, by a region at a reverse side of the plane residing within the prescribed radius from the focused point, as a depression degree of said local region. The visualization processing system further includes a fourth subset of computer programs for synthesizing the elevation degree and the depression degree in a weighting manner to determine a degree of openness defined about the focused point at said local region of the plane connecting the sequence of coordinate points, by a combination of the region at the obverse side and the region at the reverse side of the plane residing within the prescribed radius from the focused point, as an elevation-depression degree of said local region.

The claimed invention includes the distinctive concept of synthesizing the elevation degree and the depression degree in a weighting manner to determine a degree of openness defined about the focused point at the local region of the plane connecting the sequence of coordinate points, by a combination of the region at the obverse side and the region at the reverse side of the plane residing within the prescribed radius from the focused point, as an elevation-depression degree of said local region. The cited references do not describe this concept or the operation of the second, third and fourth subsets, as recited by claim 1. Thus, claim 1 is patentable over the cited references

In the *Response to Arguments* section, the Examiner alleged that claim 1 did not recite certain elements that were argued as distinguishing the claimed invention from the cited references. The foregoing amendment clarifies the operation of the second, third and fourth subsets and the arguments made in the previously filed *Response* in support of the patentability of claim 1 due to the second, third and fourth subsets are incorporated herein by reference. *See Response, April 24, 2009, pp. 10-13.*

Claims 8 and 9 include elements similar to those discussed above in connection with claim 1 and are patentable over the cited references for at least the same reasons as claim 1.

Claim 13

The foregoing amendment to claim 13 clarifies the second, third and fourth subsets of computer programs. The claimed visualization processing system includes a second subset of computer programs for determining a see-through solid angle defined about a focused point at a local region of a plane connecting the sequence of coordinate points by a region at an obverse side of the plane residing within a prescribed radius from the focused point as an elevation degree of said local region. The claimed visualization processing system also includes a third subset of computer programs for determining a see-through solid angle defined about the focused point at said local region of the plan connecting the sequence of coordinate points by a region at a reverse side of the plan residing within the prescribed radius from the focused point as depression degree of said local region. The claimed visualization processing system further includes a fourth subset for synthesizing the elevation degree and the depression degree in a weighting manner to determine a degree of openness defined about the focused point at said local region of the plane connecting the sequence of coordinate points by a combination of the region at the obverse side and the region at the reverse side of the plane residing within the prescribed radius from the focused point as an elevation-depression degree of said local region.

The claimed invention includes the distinctive concept of determining a see-through solid angle defined about a focused point at a local region of a plane connecting the sequence of coordinate points, by a region at an obverse side of the plane residing within a prescribed radius from the focused point, as an elevation degree of said local region; determining a see-through solid angle defined about the focused point at said local region of the plane connecting the sequence of coordinate points, by a region at a reverse side of the plane residing within the prescribed radius from the focused point, as a depression degree of said local region; and synthesizing the elevation degree and the depression degree in a weighting manner to determine a degree of openness defined about the focused point at said local region of the plane connecting the sequence of coordinate points, by a combination of the region at the obverse side and the region at the reverse side of the plane residing within the

prescribed radius from the focused point, as an elevation-depression degree of said local region.

The cited references do not describe this concept or the operation of second, third and fourth subsets as recited by claim 13. Thus, claim 13 is patentable over the cited references.

Dependent claims

Claims 2, 3, 5 and 6 depend from claim 1 and claims 14-16 depend from claim 13. The dependent claims are patentable for at least the same reasons as the independent claims.

CONCLUSION

The foregoing is submitted as a complete response to the Office Action identified above. Applicant believes this application is now in condition for allowance and solicits a notice to that effect. If there are any issues that can be addressed via telephone, the Examiner is asked to contact the undersigned at 404-685-6799. The Commissioner is hereby authorized to charge any deficiency, or credit any overpayment, to Deposit Account No. 11-0855.

Respectfully submitted,

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